Progress Report on Work on Contract No. 16-01 PM
Mid-Year Project Report
Training Program for Conservation Agriculture Systems, Practices and Technologies
San Joaquin Valleywide Air Pollution Study Agency
February 28, 2017 and Amended March 17, 2017 and March 21, 2017

This report provides a summary of overall progress made on this training project since the project's inception last fall on September 17, 2016. Due to the project's postponed initiation, however, considerable preliminary planning and set-up work was actually done before that date. We provide here a concise, and now twice-revised item-by-item summary of progress accomplished to date according to Exhibit B of the contract as well as a projected Work Schedule for the project's Year 2. I wish to point out on our behalf, however, that the overriding bulk of the work that we have indicated that we will achieve with this three-year effort has to do with the creation of a California statewide multi-stakeholder network of farm demonstration evaluations that will be realized by the completion of year three. Much of what is being done at this time in the project is groundwork for that network and this foundational effort has not only been time-consuming, detailed, and lengthy, but it is now yielding major buy-in and support from a wide range of partners. We wish to instill this particular point on reviewers of our progress report at this time. While not everything, not every detail of the scope of work has been achieved to date, we are making steadfast progress on this overarching goal and we believe that this progress will, - in the future, - yield significant benefit that many partners will benefit from.

Overall, this project continues to achieve a very formidable amount of work on several very active and productive fronts and it has resulted in the very sorts of impacts and outcomes that were identified and envisioned in our scope of work and proposal to the San Joaquin Valleywide Air Pollution Study Agency. This work has aimed to establish and activate a series of local networks of farm demonstration evaluations and training opportunities on conservation agriculture throughout the State that work cohesively to improve economic viability and resource conservation of farming in California. Work undertaken during the current reporting period has sought to 'scale-up' even further our overall project goal of creating a farm demonstration training program in California that will be a truly 'multi-agency,' multi-partner endeavor. We believe that the progress made in this regard during the rather condensed reporting period due to the project's late start, is on target and in line with our overall work schedule.

Disclaimer:

"The statements and conclusions in this report are those of the Contractor and not necessarily those of the California Air Resources Board, the San Joaquin Valleywide Air Pollution Study Agency, its Policy Committee, their employees or their members. The mention of commercial products, their source, or their use in connection with material reported herein is not to be construed as actual or implied endorsement of such products."

2.1 Expand the number of farm demonstration sites from current array to new regions, counties, and cropping sectors with each new site having its own public training/education and performance monitoring activities associated with it.

This is the fundamental goal of this project and it is being achieved in accordance with a very deliberate process of convening major stakeholders and partners. Again, it is key for the San Joaquin Valleywide Air Pollution Study Agency to appreciate that this has taken considerable time and effort in and of itself with many, many meetings being needed to bring people together at the outset so that the actual demonstrations may take place in constructive manner. To this end, a major stakeholder meeting of leaders of key agricultural agencies and groups in California including the California Association of Resource Conservation Districts, the USDA NRCS, the California Department of Food and Agriculture, the University of California Cooperative Extension, the University of California, Davis College of Agriculture and Environmental Sciences, Sustainable Conservation, and the Conservation Agriculture Systems Innovation (CASI) Center was held on January 18, 2017 at the University of California Division of Agriculture and Natural Resources building in Davis, CA. Participants included

Glenda Humiston	University of California
Carlos Suarez	USDA NRCS
Karen Buhr	California Association of Resource Conservation Districts
Ed Lewis	University of California, Dvais
Ami Gunasakera	CDFA
Anita Brown	USDA NRCS
Tony Rolfes	USD NRCS
Victor Hernandez	USDA NRCS
Eric Kueneman	CASI
Jeff Borum	California Association of Resource Conservation Districts
Trina Walley	East Stanislaus Resource Conservation District
Betsy Karle	UC Cooperative Extension Glenn County
Marsha Campbell	UC Cooperative Extension Stanislaus County
Kabir Zahangir	
Jeff Borum	California Association of Resource Conservation Districts
Trina Walley	East Stanislaus Resource Conservation District
Betsy Karle	UC Cooperative Extension Glenn County
Marsha Campbell	UC Cooperative Extension Stanislaus County
Kabir Zahangir	USDA NRCS
Jeff Mitchell	University of California, Davis
Paul Wenger	California Farm Bureau Federation (not present, however, was involved with follow-up update meeting at his home in Modesto, CA on the Monday following the meeting)

The purpose of this meeting was to convene these major stakeholder leaders and to initiate joint efforts aimed at establishing a memorandum of understanding among all partner groups that will establish the California Farm Demonstration Network as a means for developing and exchanging information on improved performance agricultural production systems in the state. A summary of the introductory slides that were presented at the meeting is given in the Addendum at the end of this mid-year report to the San Joaquin Valleywide Air PollutionStudy Agency.

Following the January 18, 2017 meeting, a meeting has now been scheduled for March 10, 2017 in the CDFA building in Sacramento at which all of these stakeholders will come together to iron out an MOU for the statewide farm demonstration network. Representatives of the San Joaquin Valleywide Air Pollution Study Agency were invited to the January 18th meeting and have been invited to this upcoming meeting. It is important for project reporting purposes to acknowledge that there is now very strong support of the network by these allied groups. Once the initial MOU document has been created, other groups and partners will be added to the network.

It will be through this MOU that the network of farm demonstrations will be achieved and it is therefore our intent to be able to provide evidence of the signed MOU, the inception of an initial array of local farm demonstration sites, and the requisite monitoring, educational outreach, and evaluations associated with these demonstrations that are all part of the overall goal of this Scope of Work objective. We believe that we are on target with respect to achieving this goal.

2.1.1 Enlist a minimum of six new farm demonstration evaluation sites.

Please note that we expect that several, likely more than six new demonstration sites will be established through the relationships that are now developing under the multi-partner MOU that we have been working to achieve, but to date, we also have set up five additional farm demonstration sites at which partner farmers have instituted conservation agriculture practices These sites, which are in addition to ones set up during the series of six farm sites that were reported on in Year 1, are in a range of locations from Glenn County in the north, to Kern County in the south. In addition, we are currently working on an additional set of demo sites that we expect and hope will come onto line this spring and fall and proceed into the future.

2.1.2 With local farmers, NRCS, UCCE, RCD, and private-sector partners, develop and administer locally-based education and training to a diverse group of farmers, consultants, managers, workers, and private sector participants and to anyone from the public on conservation agriculture practices that address the combined goals of air, water and soil resource conservation and agricultural profitability.

Again, it is the overriding nature of the conservation agriculture systems and practices that we are working to implement in these demonstration sites that address these

resource conservation goals. Training materials have been now developed by Project PI Jeff Mitchell and were recently shared in a pilot workshop on March 11, 2017 in Riverside, CA at the Riverside/Corona RCD meeting with about 25 participants. Documentation of this training event is provided as an addendum. This group entailed a quite diverse number of stakeholders including farmers, gardeners, and urban residents. The premise of the workshop and for Mitchell being invited to it was for the region to investigate options in terms of sustainable agricultural systems in face of the threats and challenges that are being faced by Southern California citrus farmers because of the citrus greening situation.

2.1.3 Conduct baseline performance monitoring/assessment of the conventional and alternative conservation agriculture systems under evaluation using monitoring framework developed in Year 1.

To meet this objective, we have now come up with a comprehensive framework (as well as a more abbreviated set of metrics) that we would like to use to assess performance at the demonstration sites. We now also have put in place details for a formal set of performance evaluation metrics including a number of soil health indices that have now been developed and agreed upon by various groups of colleagues that we've been working with during the course of the past year to develop monitoring metrics that we can use locally to evaluate the performance of the various production systems alternatives that will be demonstrated at local sites.

	Soil function indicators
Chemical	pH, EC, Total C and N, Olsen P, K Active C (Weil et al., 2003)
Physical	Bulk density, Infiltrometer (dual head), Soil moisture retention (Romano and Santini, 2002) Penetration resistance Dry aggregate distribution (Larney, 2008), Wet aggregate stability, & Available water holding capacity, % residue cover
Biological	Microbial biomass carbon (Horwath et al., 1994), Mineralizable carbon (Zibilske, 1994) PLFA (Phospholipid fatty acids) Soil macrofauna, crop root pathogens and mycorrhizal fungi

This minimum data set is a starting point for the sorts of farm evaluations that the network is working to set up. We will obviously need some sort of ongoing support to conduct such evaluations, however, we are hopeful that by virtue of the base, foundational work that we are now investing in this San Joaquin Valleywide Study Agency -supported work "up front" in the process, that we will be better positioned to prepare proposals for continuation support to groups such as the CDFA Healthy Soils Initiative and the Environmental Farming Act and the Soil Health Institute in Greensboro, NC. Some of this monitoring has been initiated already at the six farm demonstration sites that we have already started under this work in Madera, Firebaugh,

Denair, Dixon, and Orland. Data that are included in those data sets include: soil bulk density, soil total carbon, soil water infiltration, soil aggregation, and % residue cover. This subset of monitoring metrics is also being used as appropriate at the new farm demonstration sites that are being established in the Year 2 work. We stress that full implementation of this effort will require significant funding support beyond the amount currently provided by San Joaquin Valleywide Study Agency. To see where we would like to eventually develop this farm demonstration network, please visit the website of Soil Health Partnership http://soilhealthpartnership.org/. This is one of the models we are working to emulate here in California and this San Joaquin Valleywide Study Agency-supported effort will help us to achieve this.

At this point, our primary goal is to "grow the network concept" and to reach out to new and interested groups of partners as we have been doing over the past several months. By virtue of the stakeholder partnerships that are now being forged by the above-mentioned six partner groups (and those additional organizations that are now "in the wings" and eager to also take part), we do believe that we are now on the verge of putting together something that has not only not been created before in the State to such an extent, but that also stands to unify and strengthen local connections between groups, farmers, partners in a much more concerted fashion than has taken place in the past. Other states have achieved this sort of cohesion. Through the efforts of this project, we are working to do something similar. And as evidenced by this mid-year report, we are working on a number of active fronts to achieve this.

2.1.4 Initiate an educational training program using the COMET-Farm model tool for determining GHG emissions reduction potential of alternative practices and systems, and provide training related to the potential benefits of adjusting specific management practices for emissions reduction benefits.

This work has not been accomplished to date, however, it will be our intent to begin it during the coming cycle. We point out again that much of the effort at this point has been on bringing the network concept together, convening a group of important stakeholders, creating an MOU that will unify and coalesce our goals and begin step-by-step to initiate local demo activities once these formative things have been accomplished. We have conducted a preliminary model run of COMET-Farm for the long-term conservation agriculture training site in Five Points, CA, however, our intent through the remainder of Year 2 will be to implement that effort to a number of the demo sites as well.

2.1.5 This farm demonstration network educational and training objective will also provide farmer-to-farmer learning and mentoring opportunities by virtue of the volunteer farmers who will be taking part and sharing their goals and experiences.

This work is being planned for the coming cycle of the project.

2.2 Develop curriculum and conduct training on conservation agriculture systems, practices, and technologies for at least 200 participants.

A comprehensive curriculum on conservation agriculture systems, practices, and technologies has been prepared and used at several training events including the March 11, 2017 workshop in Riverside, CA and the upcoming Chico Renewable Agriculture Conference in Chico, CA on March 23, 2017.

2.2.1 In Year 2, we see a significant need to consolidate information related to the value of developing conservation agriculture systems and practices here in California. To date, a consolidated, concise training curriculum does not exist and could be extremely valuable in terms of increasing awareness and understanding of the need for developing options. The training will include cohesive slide, video, and written elements that will be delivered to a minimum of 200 farmers, consultants, and private sector beneficiaries in Year 2 of the project.

An example of this material was produced in the California Agriculture article, Conservation agriculture: Systems thinking for sustainable farming, that was authored by 29 farmer, University, USDA NRCS and other private sector partners http://ucanr.edu/repositoryfiles/cav7002p53-160947.pdf .

2.3 Provide a demonstration and educational facility that will provide training to a diverse group of farmers, consultants, managers, workers, and private sector participants at the University of California's Conservation Agriculture Systems Innovation (CASI) Center's hub facility in Five Points, California.

Work under this Scope of Work item is fully underway and is progressing extremely well. The Five Points training site was recently instituted as a national long-term study site in the Soil Health Institute's (Greensboro, NC) online Long-Term Agricultural Experiments Directory Project (http://soilhealthinstitute.org/help-us-create-research-site-master-list/).

This Work Plan objective will be achieved in Year 2 through a series of live field training sessions that are projected during the coming months, a series of You Tube videos that are being prepared, and a number of written summaries that will be widely distributed via a number of public outlets including farm press publications, peer-reviewed scientific journal publications, and newspaper articles during the coming reporting cycle.

2.3.1 The training hub is unique in California and includes modules related to:

1. Emissions reduction potential of conservation agriculture systems (PM, GHG, nitrogen, CO2);

2. Soil health improvement practices;
3. Increased water use efficiency;
4. Coupling of precision irrigation with reduced disturbance practices; or
5. The potential ecosystem service benefits of scaled-up adoption of conservation agriculture systems in California

2.3.2 Training will be conducted throughout Year 2 for 1) small tour groups, and 2) dedicated scheduled events for an expected 200 participants.

This training objective is being addressed through a series of ongoing educational events summarized above and that are also being planned for this summer. Demonstration materials related to benefits and impacts of conservation agriculture management on various soil functions have been prepared by Mitchell and are being shared with several USDA NRCS folks so that they augment the visibility and reach of the training that is accomplished by this SJVStudy Agency effort. These materials consist of sieve and sample containers and examples of soils from the Five Points, CA study site that have been managed differently for the past 17 years. Arrangements for providing and transferring the training materials have been made with USDA NRCS State Office conservationists Tony Rolfes, Anita Brown, Victor Hernandez and Kabir Zahangir.

2.4 Project outreach and extension education program

2.4.1 Prepare and distribute monthly press releases on timely project progress.

We are preparing press releases that will go out in April and subsequent months. We will provide citations and links to these to the San Joaquin Valleywide Study Agency's Project Manageras they appear. We will make sure that the designated number of press releases for Year 2 is completed by July 15, 2017.

2.4.2 Prepare a series of instructional You Tube videos on the principles, practices, and systems of conservation agriculture that are being implemented and successfully used in a variety of cropping systems in California.

Again, we have begun to set in place some of the preliminary groundwork that will lead to these videos and intend to produce them by the July 15, 2017 Year 2 (of 3) designated termination time, but they are not available at this time.

2.4.3 Prepare and submit a major research summary article on the long-term ecosystem service benefits of conservation agriculture as well as on the economics of these systems for peer-review publication in a widely circulated quarterly research journal of the University of California, California Agriculture.

This draft is underway and will be submitted by the Year 2 (of 3) termination date of July 15, 2017.

2.4.4 Prepare and submit a major editorial article on research-derived benefits of conservation agriculture in California related to crop yield performance.

This is also being prepared. We envision an article draft coming from the training hub in Five Points, CA by the designated July 15, 2017 Year 2 (of 3) termination deadline.

2.5 Develop and use project evaluation capability using survey and feedback instruments that capture such information as "X-activity about Y-practice led to adoption of Y-practice by ten farmers who manage Z acres." This evaluation will be aimed at activities planned to increase adoption of these innovative conservation agriculture practices."

We will provide this sort of information by the July 15, 2017 Year 2 (of 3) deadline, however, we will provide the comprehensive evaluation work in Year 3.

Progress related to Scope of Work

In summary, as noted at the beginning of this mid-year report to the SJV Study Agency, the late start of this year 2 support, plus the early deadline for the mid-year report have created some difficulty since much of the work we are currently engaged in has not fully realized what we expect will be additional, substantive outcomes that will result from the effort. That being said, we believe that we are fully on target and carefully and conscientiously implementing the goals and objectives of this project and achieving formidable results on it. We expect to provide additional significant measures of progress in our Year 2 report on August 15, 2017 and further, we believe that this work overall will yield considerable value and benefit to a very broad range of California stakeholders as evidenced by the partners we have brought together to date. This accomplishment, - in and of itself, - is a major achievement of our work..

Addendum 1

January 18, 2017
Introductory Presentation regarding the California Farm Demonstration Network
Davis, CA

I. Creation of the California Farm Demonstration Network

Shared common goals

- Achieving healthy soils in California (NRCS)
- Reducing GHG emissions and increasing water use efficiency (CDFA)
- Increasing production efficiencies and improving overall health of California's people and resources (UC ANR), and
- Informing and empowering local community development (CARCD)
- Increasing profitability and heading off regulations (CFBF), and
- Increasing engaged scholarship and research impact (UCD)

In clear and specific ways, we are quite literally "all in this together."

Creation of a specific means to accomplish these joint goals, -

increase the adoption of conservation agriculture, healthy soil and climate-smart systems in California via a statewide network in which local discovery, demonstrations of improved performance systems, learning, and communication are shared,

... to connect and expand

Steps in the network development process

- October 14, 2014 exploratory meeting between NRCS and CASI
- Series of conference calls and meetings
- Learning from other similar, successful efforts
- Early grassroots efforts of regional network hubs – Mendocino and Glenn Counties and the East Stanislaus RCD
- Ongoing efforts of CASI showcased farms

Partners in the process

- Tony Rolfes, Jim Komar, Carol Mandel, Rob Roy, Margaret Smither-Kopperl, Dennis Chessman, Erica Linquist, Joe Williams, Kabir Zahangir, Sid Davis, Robert Vlach, Wendy Krehbiel, Johnnie Siliznoff, Bob Fry, Genet Carstensen, **NRCS**
- Eric Kueneman, Judee Fisher, Ron Harben, Jerry Rossiter, Alan Wilcox, Monte Bottens, **CASI**
- Karen Buhr, Chris Gardener, Kristen Murphy, Jeff Borum, Kandi Manhart, Greg Baker, **CARCD**
- Michelle Leinfelder-Miles, Betsy Karle, Marsha Campbell, Dan Munk, Gene Miyao, Deborah Giraud, Dani Lightle, Will Horwath, Kate Scow, Howard Ferris, Randy Southard, Glenn McGourty, Sat Khalsa, Gary Sposito, Peter Nico, Jeff Mitchell, **UC**
- Jesse Sanchez, Tom Barcellos, Dino Giacomazzi, John Diener, Tom Willey, Alan Sano, Darrell Cordova, Michael Crowell, Steve Samra, Rich Collins, John Teixeira, Scott Park, **Farmers**
- Ami Gunasekara, Karen Ross, Jenny Lester-Moffett, **CDFA**
- Garrett Liles, **CSU Chico**

SHOWCASING OF EXISTING EXPERIENCE

- focused on experienced farmers
- public sharing

EDUCATION, COMPILATION OF KNOWLEDGE AND EXPERIENCE, AND SHARING OF KNOWLEDGE

- development of content and information sharing activities

CLIMATE-SMART AGRICULTURE DECISION TOOL GUIDANCE AND SUPPORT

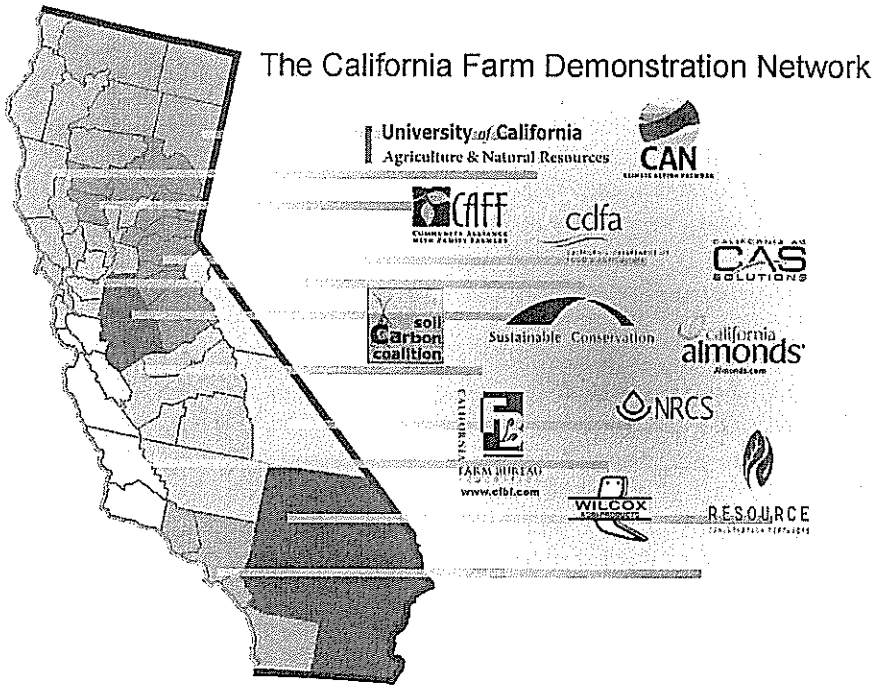
FARM DEMONSTRATION EVALUATIONS

- implementation of conservation agriculture practices and systems by new wave of farmers
- showcasing of practical learning
- connecting people in productive local efforts

FARM DEMONSTRATION PERFORMANCE MONITORING

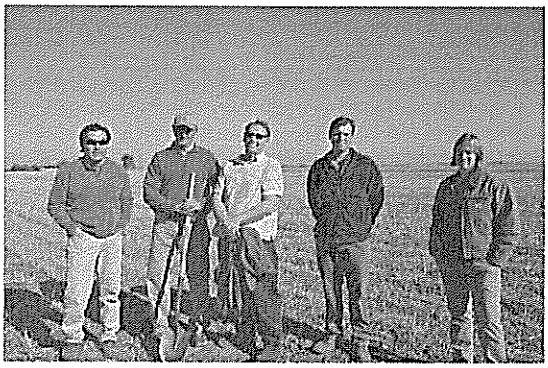
- development, testing, of performance-monitoring metrics

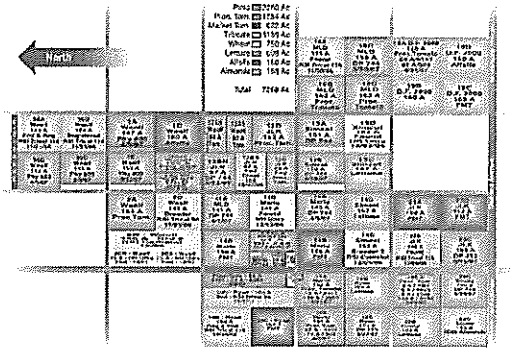
ONLINE DATA AND INFORMATION SHARING



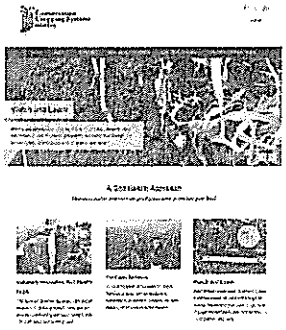
Why this is important

- Farmers and ranchers are often isolated
- There is tremendous diversity
- Conventional educational or information dissemination programs may not provide the relevant learning style that leads to eventual adoption of improved practices, technologies, and systems
- There are other very successful and highly impacting efforts that provide models or opportunities for employing similar techniques or approaches in California



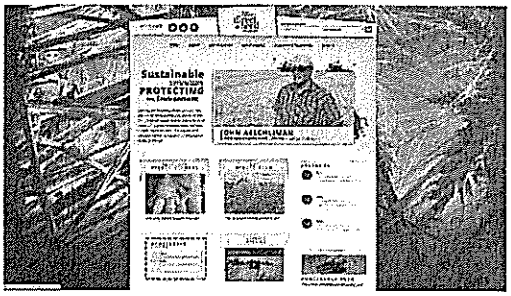


Farmers and ranchers are busy and often report that they do not always have the time or connections to learn about and become familiar with new approaches.

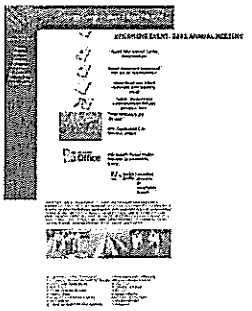


Indiana Conservation Cropping Systems Initiative

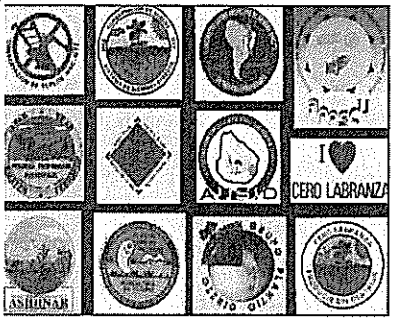
There are examples of very successful efforts in other regions that are already working.



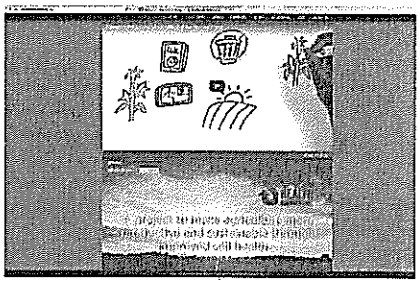
Pacific Northwest Direct Seed Association



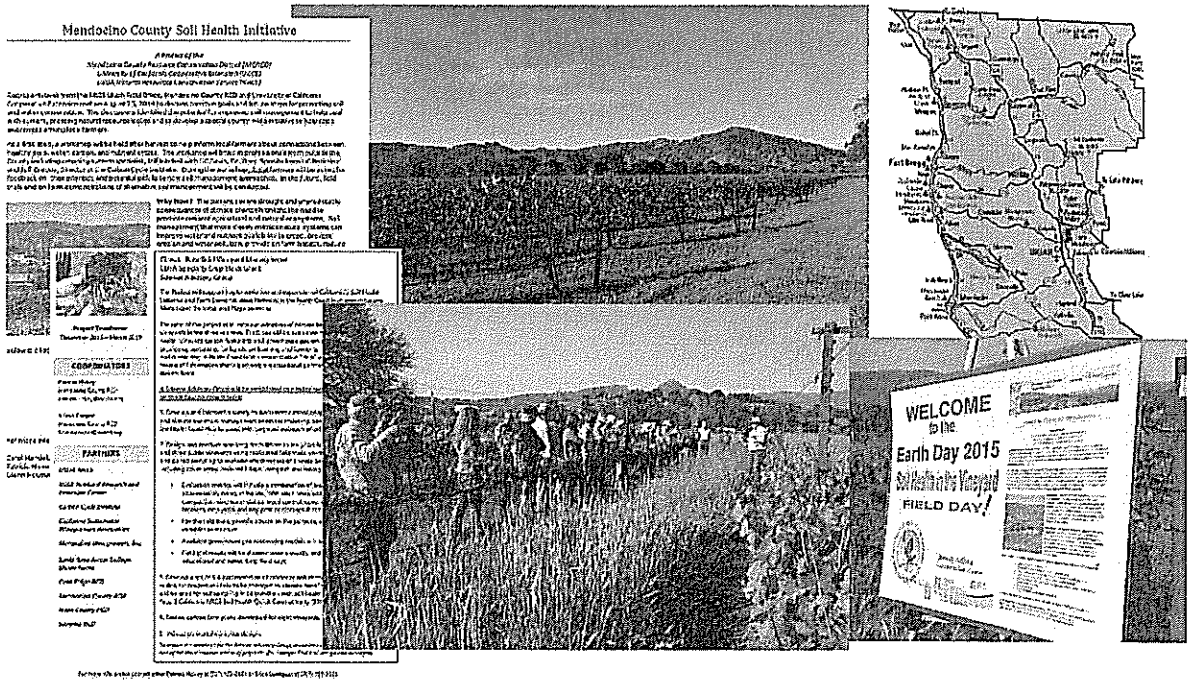
Georgia Conservation Tillage Alliance

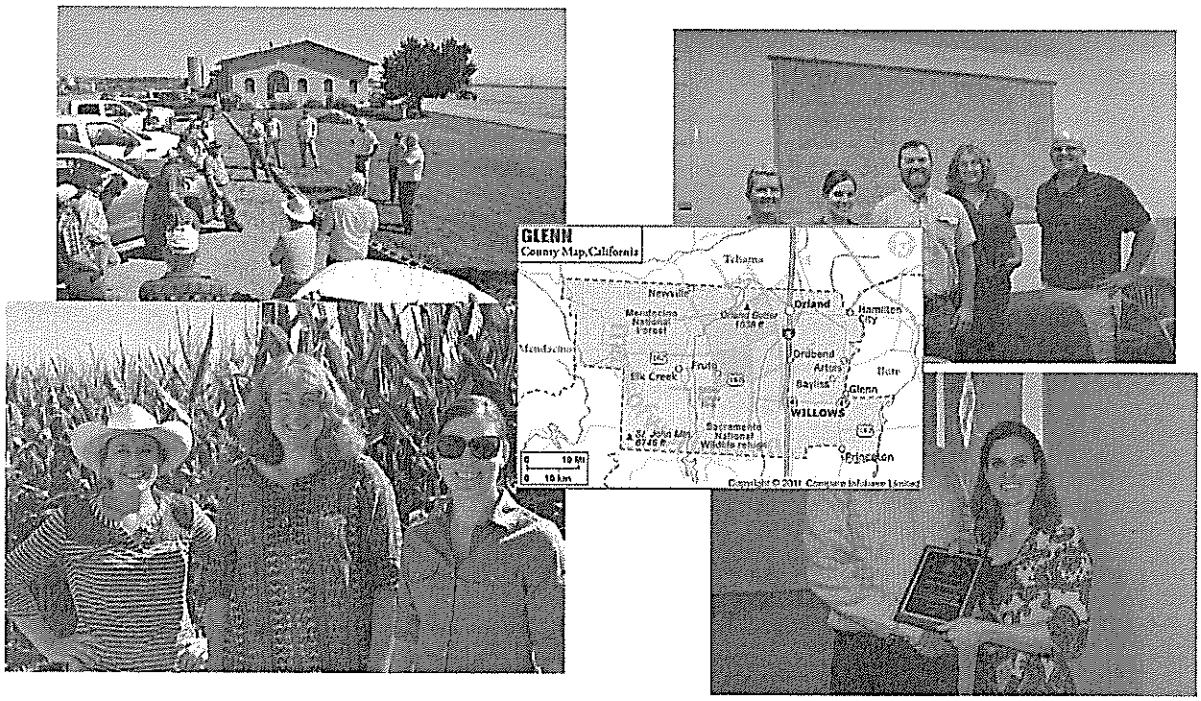


Various farmer-led cooperatives in South America



Soil Health Partnership IA, IL, IN




GLENN
County Map, California
Tehama
Newville
Orland
Hamilton City
Mendocino National Forest
Orland Buttes
Mendocino
Fruto
Elk Creek
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WILLOWS
Sacramento National Wildlife Refuge
Princeton
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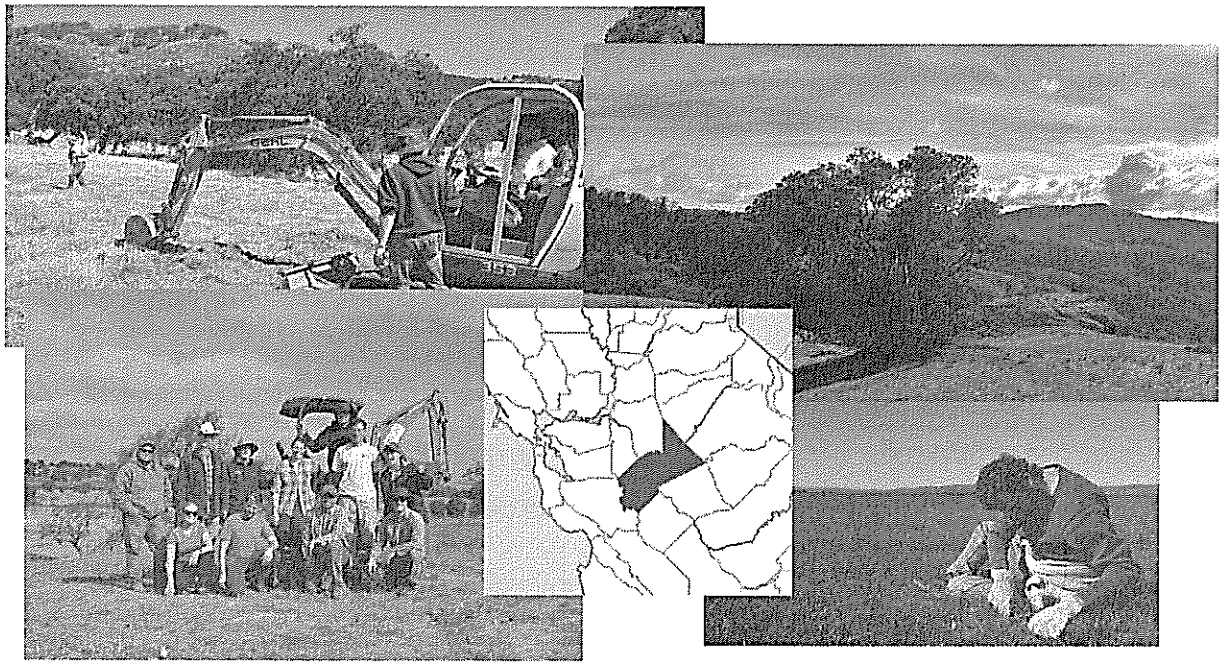
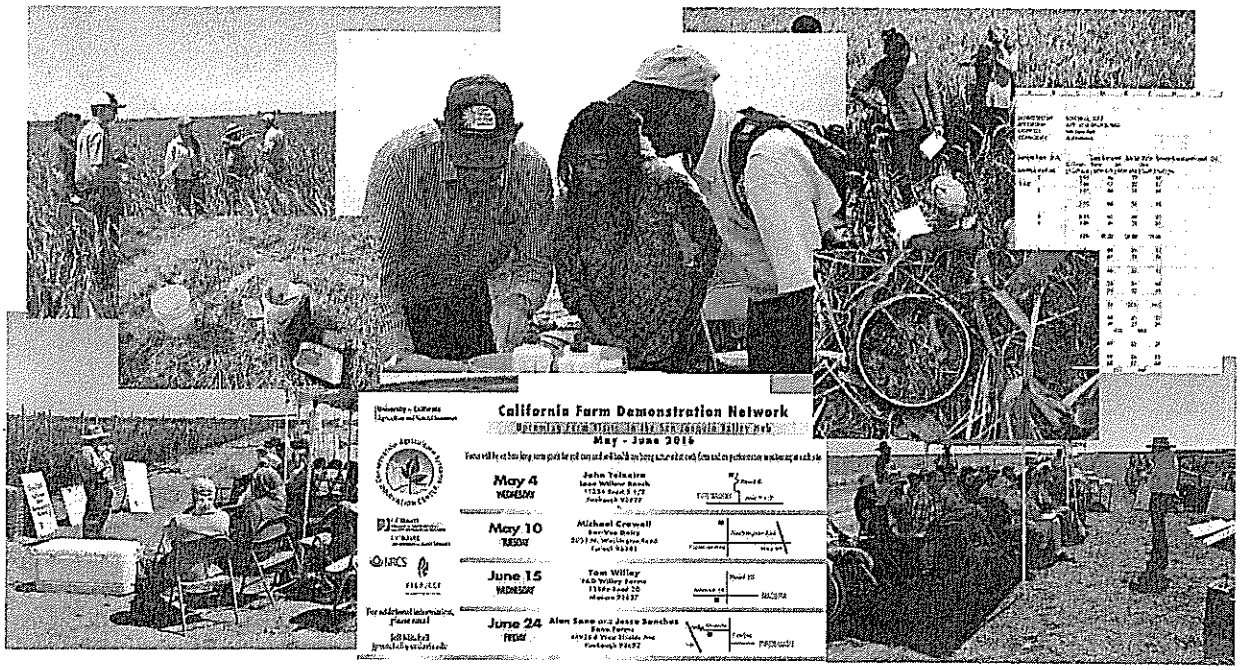




Crops and systems for which conservation agriculture, soil health, and climate-smart approaches exist in California

- grapes
- walnuts
- almonds
- corn
- wheat
- melons
- sorghum
- triticale
- garbanzos
- cotton
- tomatoes
- broccoli

combined cash-receipts value of $16 billion, or 30% of 2014 California agricultural cash receipts

Today we seek your support of these goals, this vision, and of the proposed operations structure for this network.

What everyone stands to gain

- **Everyone**
  - More adoption and visibility of conservation agriculture, healthy soils, and climate-smart systems in California
- **CARCD**
  - Scaled-up local community development and capacity building
- **CDFA**
  - Added value to your Environmental Farming Act demonstration program
- **NRCS**
  - Added value to your Healthy Soils Campaign and local planner positions
- **CFBF**
  - Sustained profitability while staying ahead of regulation
- **UC ANR**
  - Locally-connected applied research, extension and technology transfer activities
- **UCD**
  - Engaged scholarship and research impact

What is needed?

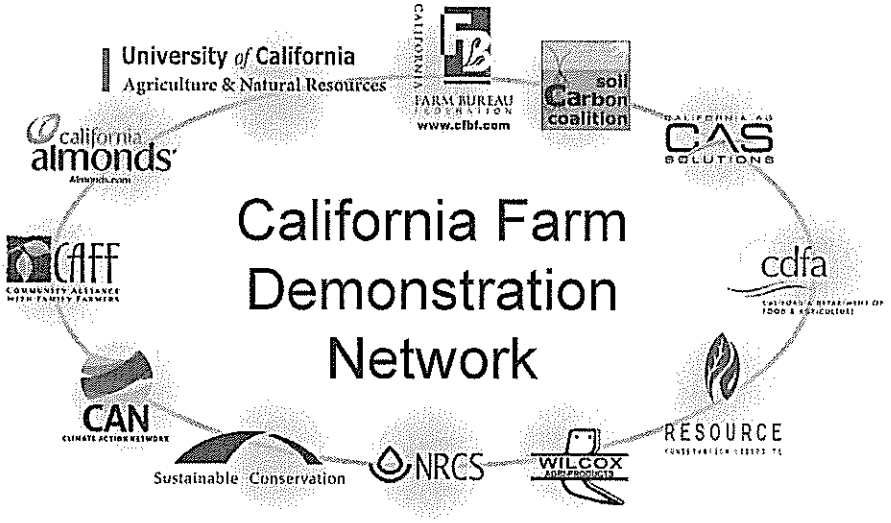
- Strong, unified support from each of you
- A steering committee that will help guide the network and provide accountability to it
- An interim coordinator, web portal developer, and communications, development, and technical support teams,
- The developed capacity to conduct system performance evaluations in conjunction with the farm demonstrations using appropriate analytical tools,
- Creation of a coordinated strategic plan for network expansion, and
- A successful fundraising program

Statewide coordinator responsibilities

- Provide coordination and communication with the regional Hubs
- Oversee the network and get it to be active and fully functional
- Keep good communication between all partners
- Develop a "Who's who" document
- Develop and implement strategies for getting new Hubs active
- Develop and implement a fundraising strategy
- Take the show on the road
- Convene the network steering committee, and
- Coordinate local Hub farm demonstration evaluation technical support

Discussion questions

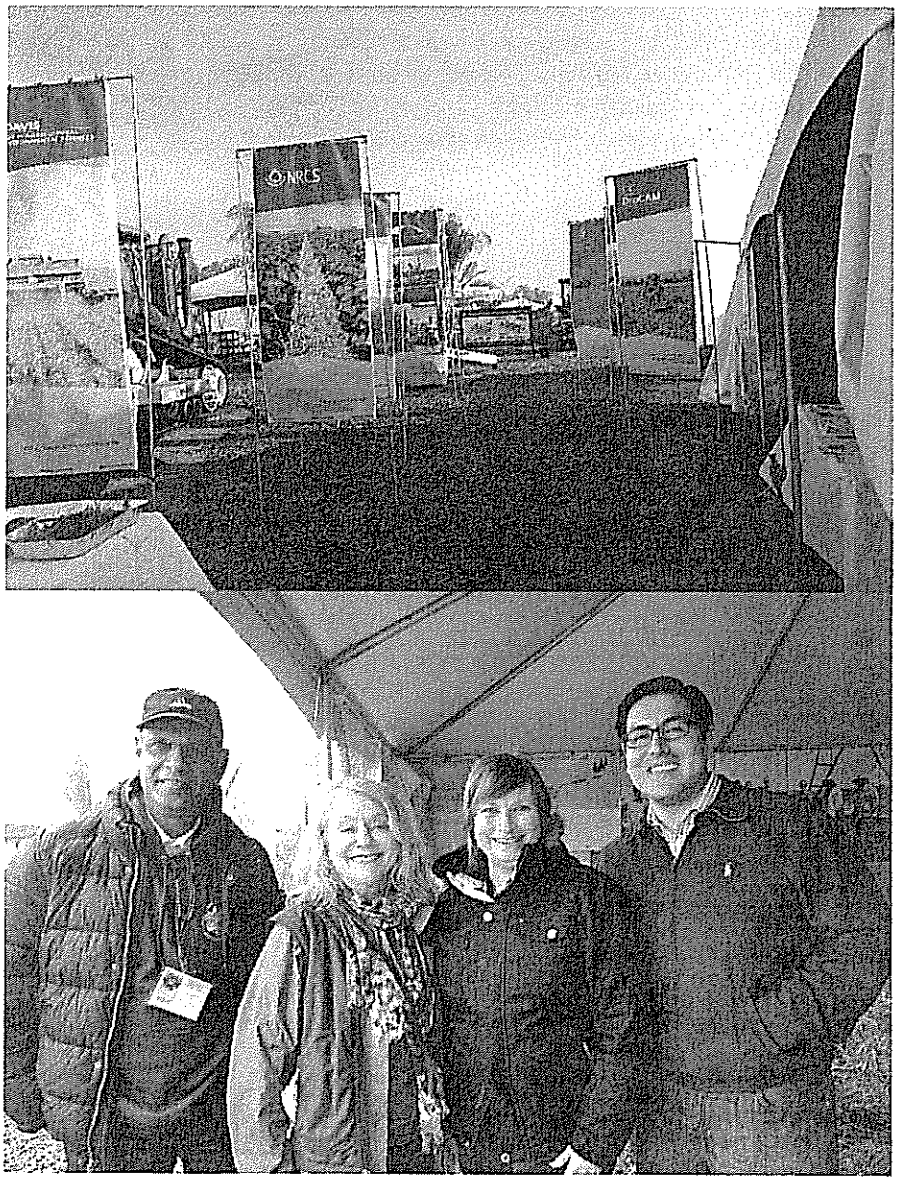
- Do you support the general goals, vision, and operational structure for this statewide farmer demonstration network?
- Do you have suggestions related to the general network concept that we've introduced so far?
- Would you help us to launch the network by vocally demonstrating your support through your agency's internal communications vehicles?
- Would you, or your delegate, agree to be on our network steering committee?
- Would you be willing to be part of our fundraising efforts?
- Who else do you think should be involved?
  - CAFF
  - Sustainable Conservation
  - California Ag Solutions
  - CalCAN
  - Soil Carbon Coalition
  - Private sector
- Where do you think the network and its Hubs ought to be housed or reside?
- What do you think the network should be called?
- What do you think would be appropriate measures of success?
- Should the network be a 501c3?



Now is the time to make this happen.

2. Display and public training and outreach at the 2017 World Ag Expo in Tulare, CA February 14 – 16, 2017

As part of this project, a group of about 20 Workgroup partners including private sector, farmer, NRCS, and University people prepared and conducted a major public outreach on behalf of the project's goals at this year's World Ag Expo in Tulare. Over fifty new Workgroup members were added to our CASI Center and many opportunities for public education were provided by our participation in this event. The overall educational and training goals of this San Joaquin Valleywide Air Pollution Study Agency project were pursued by our involvement in the WAE. A video summarizing our outreach work is available at our CASI website at http://casi.ucanr.edu/Video_updates/ .



3. Expansion and leveraging of the value of this San Joaquin Valley Valleywide Air Pollution Study Agency project with CA, AZ, and NM partners

During this reporting period, we have also worked strenuously with farmer, private sector, University, NRCS and other agency partners also in California and now in Arizona and New Mexico in seeking to further expand the networking work that this project has initiated. This effort is very much modeled after the network that we are working to develop here in California. A preliminary framework for this network has been created. We provide this example of how our original work in California to establish a farm demonstration network has now the potential to expand.

4. Farm network soil sampling and database training in Firebaugh, CA, February 9, 2017

A soil health sampling and field app open-source database training session was held on February 9, 2017 at Sano Farms in Firebaugh, CA, the site of one of our farm demonstration activities in 2016. This training provided an opportunity for participants to learn and come to agreement on core performance monitoring techniques and data collection approaches that will be used as the farm demonstration network expands. Peter Donovan of the Soil Carbon Coalition demonstrated the mobile phone app, Atlasbioworks, https://atlasbiowork.com/), and showed how it can be used to conveniently and easily standardize field data monitoring at all sites. Atlasbiowork.com is an open network framework or scaffold for a shared intelligence that allows easy data entry and mapping of landscape function such as water infiltration, biomass production or yield, soil tests including soil C, soil health indicators and soil cover. It will be our intention to use this technique for further performance monitoring in the network.

Sano Farms farm manager, and 2015 White House Champion of Change for Climate-Smart Agriculture, Jesse Sanchez, is shown at the training with other participants.

5. Project momentum and next steps

The very quick requirement to submit this 'mid-year' report sheds light on some of the accomplishments that we have been making, however, the bulk of planned activity and impact for this current project year is still ahead of us. We anticipate having a very intensive period of training activities coming up during the coming six months that will consolidate the 'foundation laying and building' efforts that we have been engaged upon to date.

Addendum 2
Additional reporting materials submitted March 13, 2017

1. **Expanding on your partnerships with other organizations and how those partnerships will help expand the outreach of this project.**

From the above, it is clear the extent to which the work outlined in this mid-year report has expanded partnerships with and to other key stakeholder organizations. These groups are represented by the array of logos indicated in the network Powerpoint presentation slide set and include

a) The California Association of Resource Conservation Districts
b) The USDA NRCS
c) The California Department of Food and Agriculture
d) The University of California Division of Agriculture and Natural Resources
e) The University of California, Davis, and
f) The California Farm Bureau Federation (pending presentation by Jeff Mitchell and affirmative decision by CFBF Board of Directors at their April 19, 2017 meeting)

In addition, other farmer, private sector and other agency groups as are listed in the array or logos and that include Wilcox Agriproducts, California Ag Solutions, the Community Alliance with Family Farmers, and the California Climate Action Network, are all potential partner groups with which we will work.

On March 11, 2017, at the State Offices of the California Department of Food and Agriculture in Sacramento, key stakeholder parties of this group from CDFA, CARCD, NRCS, CFBF, UC ANR, and UC Davis met to iron out the preliminary details for a formal Memorandum of Understanding (MOU) between these parties for the establishment of the farm demonstration network that this work has been leading toward. Details of the MOU and a public signing and publicity event related to it will take place in the near future. By working together, at local levels, these groups stand to be able to generate a considerable extent of grassroots, locally-derived farm demonstration evaluation work as well as the eventual cross-regional communication and information sharing that we envision achieving by this work.

During the coming couple of months, the steering committee that we have formed for the farm demonstration network that consists of representatives from each of these six core stakeholder

groups will also meet to conduct additional strategic planning and to learn from other similar successful efforts in other states exactly how they've managed to create the sorts of grassroots local partnerships that we are trying to achieve with the California farm demonstration network. Within the coming month, we will, for instance, hold a televideo conference call with similar colleagues from the Mississippi Conservation Commission, the MS NRCS, the University of Mississippi Cooperative Extension, and the Mississippi Association of Soil and Water Conservation Districts. Jeff Mitchell has interacted with them and has begun to learn directly from them how they manage and implement local, joint planning efforts in their state and we hope that such models of partnerships can be emulated here in California to a far broader level than they are currently being pursued.

2. **An approximation of how many people you reached at the Ag Expo**

It was hard to conduct a completely accurate tally of interactions that took place at our project's display and presence at the 2017 World Ag Expo in Tulare, but we received about 50 expressions of interest in becoming part of our Workgroup and requests for further information as well as probably over 100 conversations with people who visited our display site. The soil health display demonstration on soil aggregation that we provided during the entire Tulare event has since been replicated just this past Saturday at a meeting of the Riverside/Corona Resource Conservation District in Riverside, CA by Jeff Mitchell to a group of GROW RIVERSIDE and this group also has now expressed interest in becoming part of the growing California Farm Demonstration Network.

3. **Approximately how many participants there were at the Feb. 9th training session**

Five participants were involved with the February 9th training. Field information from that training event was compiled and samples are now being analyzed for total Carbon at the University of California Analytical Lab in Davis. The open-source data platform, *Atlasbiowork.com* was used and data from the event are now being chronicled at the site for the Firebaugh, CA farm as an initial learning effort at how to use the application. We also intend to expand the use of this application in all subsequent farm demonstration work in the future as a result of the exposure and training that took place at that event.

4. **A description of what you envision for Year 3 (including expected metrics/deliverables, and how Year 3 would be different from Year 1 and 2)**

We do not actually envision major changes in what we are or have been doing going into the near future. Our primary challenge or task is now to build upon and expand the very efforts that have been started by this work. There is now a growing recognition that the farm demonstration network is being realized, that it is gaining momentum, that it has a growing array of bonafide and strong partners associated with it, and that it is creating a good set of solid underpinnings that will support its value. Rather than worry about changing too much of this momentum mid-stream, so to speak, our task is rather to primarily sustain the overall effort to even greater resolution, impact, and value. By the end of Year 2, for instance, we

hope to have not only the formal MOU between major partners in place, but we also hope to have a series of 'next generation' farm demonstrations in place and publicly underway. The process that we will use to achieve these new demonstrations will rely fundamentally upon the local, RCD, farmer, Farm Bureau (pending outcome of the April 19th Board of Directors meeting at which Jeff Mitchell will present the network), NRCS, UC ANR, and folks from other groups who we will be working to meet with in very local, county-by-county contexts to expand the network's reach and to encourage locally-derived demonstrations of improved performance systems. Depending upon the counting system used for estimating the number of these new wave demonstrations, we would hope to put into place a total of a minimum of 15 such demonstrations this reporting cycle. The core and fundamentally important work of this phase of work is the team-building and local activity connections that are being established at this time.

For instance, as an outgrowth of one of the farm demonstration sites that we highlighted last year, not only has follow-up soil sampling and data collection been done at the site, but those data are now part of a growing open-source database that provides a model for further use and expansion at other sites in the future, but the new practices that this farm has begun employing that as reported last year have significantly reduced overall fertilizer use, added carbon to the soil, reduced diesel fuel use, and maintained productivity, were shared via outreach reporting to over 50 people during the past month.